

Transcript of meeting chaired by the Department of Health and Social Care

3 June 2021

Meeting convened after stakeholder letters to PM, Boris Johnson dated 18/2/2021 and to the 4 nations Chief Medical Officers 12/3/2021.

Respecting the Chair's stipulation that 'Chatham House' must apply, the identities of participants have been anonymised, colour-coding as follows.

Key: Chair, Mr Michael Dynan-Oakley[#], Deputy Director, PPE Policy, DHSC

Government/health officials

Stakeholders

Government/health officials (PPE policy and IPC guidance)
Cabinet Office
Department of Health and Social Care
Four Nations IPC Cell
NHS England, NHS England / Improvement, NHS Scotland, NHS Wales
Public Health Wales
Public Health Agency Northern Ireland
Scottish Government (including ARHAI)
UK Health Security Agency
Stakeholders (representing over 1 million health care workers)
AGP Alliance, representing:
Association for Respiratory Technology & Physiology
British Association for Parenteral and Enteral Nutrition
British Association of Stroke Physicians
British Dietetic Association
Chartered Society of Physiotherapy
College of Paramedics
Confederation of British Surgery
Doctors Association UK
FreshAir NHS
GMB Union
Hospital Consultants and Specialists Association
Medical Supply Drive UK
National Nurses Nutrition Group
Queens Nursing Institute
Royal College of Speech and Language Therapists
Unite the Union
British Medical Association
Royal College of Midwives
Royal College of Nursing
Royal Pharmaceutical Society

Link to the presentation given by stakeholders : <https://tinyurl.com/f7yh9vnz>

Slide numbers indicated -n-

[#] Name already in public domain

Chair: Good afternoon and welcome from me, Michael Dynan-Oakley from DHSC. It's great that so many of you were able to make this session, I'm sorry that it was postponed at least once, probably twice, and it's good that we've got representation from the Four Nations as well. This is obviously a genuine opportunity for constructive engagement and an important discussion about the IPC guidance.

The agenda is biased towards questions and answers, but we'll be hearing from **AGP-A Lead** and then from **IPC Cell** and that will help to set up the discussion to follow. And then if we get into it earlier, fine, but we've set aside 30 minutes and then 10 minutes for those two sessions.

First, let me introduce **NHS** who has managed to join this meeting who was the SRO for NHS-EI and the IPC guidance for inpatient and hospitals and NHS settings during the pandemic.

NHS: Thank you very much and hello everybody.

It's good to be able to see you and indeed for you to join us this afternoon for what I hope will be a constructive discussion between us all. I'm pleased so many people have joined us and it's really important that we have this discussion. It's important to me too that we are wanting the same things.

We are wanting the same objectives to protect our staff who are caring for our patients and the people that we serve. I know there's been a number of questions that you've already raised and that's fantastic. It gives us a good opportunity to answer what you want us to answer.

So I'm hoping we'll get cracking on that right now and indeed we will continue to work together and collaborate on any further developments of any more guidance in the future. So without further ado I'd like to get into answering those questions. So back to you, Michael, to chat.

Thank you so much and the one point I didn't mention was that I would be grateful if people could treat this meeting as Chatham House. I hope that will all sit well with you. It'll make the discussion much more free-flowing, I hope.

I'm seeing lots of nods. Fantastic. Thank you so very much indeed for that. So therefore the floor is yours.

AGP-A Lead / BAPEN: Thank you very much. May I first ask about whether minutes are being taken and will be circulated and whether it's being recorded?

It is not being recorded and that would be inappropriate given it is Chatham House.

But on top of that what colleagues from the department will do and I guess other places, will be making notes of any top points and we can reflect on those later and I dare say we may well want to share some top note minutes in due course. I hope that sits well.

Thank you very much.

Right, well on behalf of our group comprised of an unprecedented collaboration of 26 professional bodies and unions representing at least a million healthcare workers, we welcome this opportunity to discuss, albeit after considerable delay, the matters raised in our letters to the CMOs on the 12th of March and to the Prime Minister and First Ministers on the 18th of February. We do not wish to look back today to decisions made earlier in the pandemic. As I said, we wish to address the current inconsistencies in guidance and use of PPE in all healthcare environments now that aerosol transmission of COVID-19 has been recognized as important.

We recognize the latest improvements in guidance represent a move in the right direction, but I'm afraid many inconsistencies have not yet been addressed. Routine availability of enhanced PPE for healthcare workers in close contact with confirmed or suspected COVID patients is a vital interest to our members and all HCWs on the front line and cannot be delayed further. So, in a spirit of cooperation, we bring with us solutions to these problems so that we can assist you in achieving a win-win outcome for all concerned across the four nations and to restore trust and confidence in guidelines for mitigation of risk to HCWs during the COVID crisis and beyond.

There is no room for complacency despite the success of the vaccine programme. We wish to see changes to guidance with immediate effect. The status quo is not an option.

Again, we must emphasise that we wish to work with you to achieve long-overdue improvements to PPE guidance. The first slide, please -1-. Next slide -2-.

Next slide, please. Now, our aims are, as NHS has already said, is to protect frontline workers, reduce their morbidity and mortality. And to achieve this, our objectives are that we should have four nations standardisation of approach, redefining aerosol risk irrespective of AGP status.

Respiratory and eye protection for airborne COVID-19 should be available for all patient-facing interactions in all care settings. Improved ventilation is a must. And to achieve all this, improved collaboration with policymakers as stakeholders for guidance development must now be an accepted method of moving forward.

So, having said that, I would like to hand over to my colleagues who will now give a presentation outlining our case as a basis for further discussion. Thank you.

Microbiology Consultant / FreshAir NHS: And really, just to go through what is underlying our requests and the reasoning for why we are asking for these changes. And it's really predicated on our understanding of aerosol-based transmission, which as you know, there's been a huge amount in both the scientific journals as well as in the media, around a sea change and thinking around this, with the WHO and CDC acknowledging, and indeed, PHE acknowledging, the importance of inhalation transmission of smaller aerosols and not just droplet transmission.

Now, this gives us two opportunities for mitigation that we can optimise to protect healthcare workers. And this is now becoming quite a famous diagram that Professor Lindsay Marr produced, which shows these two situations. One is at a medium range distance in a poorly ventilated area. -3-

And that is where ventilation as an engineering control measure can reduce the risk of inhaling enough particles of virus to cause an infection. The other area that we would also like to focus on is the short range transmission. That's the range in which healthcare workers frequently find themselves in giving care to infectious positive patients.

You can imagine the length of a stethoscope, or an arm, or feeding somebody. That is the zone on the left hand side there, those red particles, is the area in which PPE and filtration becomes the most important mitigation factor. So there's been a recent, a very nice paper from Li et al -4- which demonstrates that this is not just based on physics and the aerosol scientists, it's actually a hypothesis that fits the basic observations based on an Einstein theory of hypothesis generation and validity of hypotheses, which basically says you can never be 100% sure, but the more information that fits with your hypothesis, the more real it is.

And so we can see these things that we're all very, very familiar with, close range dominates, most infection indoors, outdoor occurs, but very much less often, long range occurs very occasionally. All of these factors fit with the short range airborne transmission. And in fact, Sage in April 2021, do also state that when you have the small particles, that if they're sufficient to cause infection at longer distance, they also present at close proximity to the infectious patient at a much greater concentration.

And so we recognize this is an equation that's come from Li et al, which is really a nice way to describe the components. It's not an absolute number, but it's proportional. So the risk for the healthcare worker is proportional to time, that's really obvious, the longer you're in the vicinity, you're going to breathe in more, it's proportional to the concentration. -5-

And so these are factors that you can have a degree of control over, but often you have no control over the time that you're taking in close proximity to deliver care.

The factor that can decrease concentration and decrease the risk is to decrease the concentration inhaled by mask efficacy. And on the right hand side, that is just one example of a dose response curve, which demonstrates that really what you're trying to do to be safe in preventing the probability of rapidly increasing is to keep on the left hand side of that curve, keeping the numbers low enough that you don't start to exponentially rise your probability of getting infected.

So this is another lovely diagram that you can get online -6-, many people have done calculations, this is all out in the public domain, people are now including NHS workers are very ofay with the concept of ventilation being important, because over time, the concentration builds up, and also different activities, not procedures, activities, singing, talking, shouting, increases the amount of virus.

And these each of these red dots, they're based on empirical data, as well as modelling show that up to 1500 infectious doses potentially over one hour with somebody shouting and singing in a small, poorly ventilated space. And so these are the parameters of risk that we need to think about when we're thinking about protecting our staff. This has been kindly shared with me by Professor Cath Noakes and her team who published their testing of various different masks. -7-

And in every single setting, the FFP3 performs the best, better than surgical mask in reducing the amount, the probability of an infectious dose being inhaled. So currently, we're in this dichotomous situation where we have recommendations for use of FFP3, which is on the right hand side, which gives you a 98% filtration efficacy based on the US standards of filtration testing of the less than one micron size. But that is recommended just now the sort of watershed moment, the decision making process is around 'is there an AGP or not?' And that's where we're recommending it.

And yet you can see from this study, which is a graph that I got from Professor Kim Prather -8- shows that many of these procedures that we have termed aerosol generating actually produce up to 370 fold less aerosol than coughing, shouting, exercise, talking, and in fact, deep breathing and all these other things. There are many other papers that point to this. And it's on this left hand side of the graph, where there is manifold increase in aerosols that we are in fact recommending surgical masks with this.

This is what standard provision in these situations. And that is what we'd like to see a change in, to change from the decision making process as to when to wear these away from aerosol generating procedures. So currently, the UK guidance does offer less protection than other nations in the situation that our healthcare workers find themselves in. -9-

CDC clearly says that on entry to a room of a patient with suspected or confirmed SARS-CoV-2, they should use N95s. Now, N95s are more equivalent to FFP2, and we would be using FFP3. But they are using far more respiratory protection than a surgical mask. And they even have a chart demonstrating which these two different masks are suitable for.

Now, we've seen the recent upgrade, and we're delighted to see the hierarchy and the risk assessment and extending, giving a bit of room to local risk assessors to allow the use. However, it is currently worded in such a way that it seems that it's going to be difficult for people to understand what the parameters of risk actually are.

And this is not about undermining the hierarchy of control, which we fully accept, you know, vaccines are fantastic, and ventilation is an engineering control, if you could eliminate the risk, fantastic, all of these matter. This is about the point at which care is being delivered, day in, day out, in millions of interactions for our healthcare workers. It is at that point that PPE, that mask you're wearing, becomes the last barrier between an infectious lung and a non-infected lung. And that is where we would like to see a change.

So, we've also seen Australia, the Safety and Quality Guidance equivalent to our HAI standards, have also just published, and they are also advocating a hierarchical approach, but they also promote a precautionary approach based on the hierarchy. In the light of all this information, healthcare workers should adopt airborne precautions where there is uncertainty. Now, that means uncertainty as to whether this patient is positive or not. -10-

That is a different uncertainty from a positive patient, and you don't know how much aerosol they're producing, because we don't have the tools available to us to accurately describe the exact level of risk, and it will vary, because we know that 20% of people cause 80% of the infections. And again, we've had experts in occupational health who've produced risk-based approaches, and have been advocating for FFP3 for workers for a long time. So, I'd like to illustrate how the guidance has actually impacted on the ground. -11-

And you can look at infection control through a hierarchical approach, but you can also look at it in a safety way, or through, for example, a critical point of control, or layers in the cheese approach. All of these have their strengths and weaknesses in terms of models for helping you to framework the measures that need to be taken. For this, we would like to put the worker in the centre, their environment, the tools that they need, the system that surrounds them, and the task that they are involved in, and think around what that means for different types of workers in their role, day in, day out.

Paramedic: Good afternoon, everyone. I hope it's helpful to give a visual reference. -12- I'm a very visual person, and I think sometimes the pictures help. But this is one of the main work environments for paramedics and ambulance clinicians, and that first picture on the left shows a fairly standard scene of conveyance and treatment of a child with a parent in attendance. Although, I would have to say, through COVID, patients were mainly transported alone, and many of our clinicians had to take them away from their families, probably for the last time.

But it does illustrate the closeness and proximity of the care required by those working within the ambulance service. And the picture on the right simply shows the tight space within which the ambulance crews are working. And I would suggest few of you will forget the scenes in January 2021, when all the news channels were showing rows of ambulances queuing outside the emergency departments for between four and 17 hours, was the outlier that we found reported from the employers.

And whilst that variant of concern that emanated from Kent spread through the Midlands and South East, and London in particular, the College had engaged with the ambulance employers very much at the beginning of COVID, and they all without fail told us they were sticking absolutely to PHE guidance and were consistent in their response. However, the inconsistency was their application of that guidance, and that was where the anxiety of our members and other paramedics grew. Staff in the Midlands were offered personal issue powered respirator hoods from the very start of the pandemic, and to date none of those thankfully have succumbed to COVID. And I recognise this is crude anecdote, but this is our experience.

Meanwhile, at the same time, the southern areas were using surgical masks, and I'm sorry to say that we did lose clinicians during that time. We have, like other professions, lost good people, and many who are suffering from long COVID, and some who may never come back to work again.

And whatever the intent, it felt to our members like a bit of a lottery between employers, and that's why we urge for the precautionary principle to be applied. And I just ask you to consider whether you would want either yourself or your relative to sit in that space for those lengths of time, because we are seeing the demand rise again, for reasons other than COVID I have to say, but the risk is still there with the new variants. Next slide please. -13-

So the next two pictures show another main area of work for paramedics, and the two bedrooms you see are pretty normal, a messy bedroom and a care home setting. And whilst I'm saying that paramedics treat many people within their homes, we have other colleagues on this call whose professions are working in this environment, such as AHP therapists who are doing post-discharge follow-up and care, community and district nurses, midwives, carers and GPs. And they're providing undifferentiated care, meaning you never really know what you're going to go to or what you'll find behind the door, and that makes undertaking a risk assessment almost impossible in those scenarios, despite everyone's best intentions.

Researcher, Surgeon, MedSupplyDrive: Good afternoon everyone. I'd also like to share with you my first-hand experience of working on the frontline this year. When I'm at my lab at the University in my research role, their COSHH assessment states that I will not be protected from COVID-19 by a surgical mask. Only FFP3 grade protection is deemed sufficient.

Yet when I'm a surgeon-in-training at the Hospital caring for COVID positive patients in windowless rooms, performing complex wound assessment or burns dressing changes, a surgical mask is what I am provided with. And I am told I am not permitted to wear FFP3 grade protection unless performing a procedure which is on the specific AGP list.

From watching the news, our patients know that COVID is airborne and they know that other countries are providing workers with respirators and goggles. Our patients fear for our safety. Our research shows that 81% of NHS workers surveyed do not feel safe wearing a surgical mask whilst caring for COVID-19 suspected or confirmed patients. -14-

There are high rates of stress, PTSD and burnout in our staff. 21% of doctors and 33% of nurses are considering leaving their vocation. We know that workers want better protection. 80% of around 500 workers we surveyed want to wear a reusable P3 respirator due to the benefits of higher protection than disposable options, reduced risk of PPE shortages and for their environmental benefits. Next slide, please. -15- Studies have shown that UK healthcare workers are catching COVID at seven times the rate of the general population aged-match controls and that the UK has one of the highest healthcare worker death rates in the world.

That is despite having lower community prevalence of COVID-19 than in other nations. Workers who are from Black or Asian ethnicity have the highest death rates from COVID. One study suggested that young females working in the NHS have 50% greater risk of death from COVID than age-matched controls in the general population.

Deaths from COVID-19 are not occurring in workers who are working in areas deemed high risk by the guidelines. The highest rates are occurring in so-called low risk or non AGP zones. These are the areas where ventilation is not prioritised and FFP3 respiratory and eye protection is not currently provided.

Seroprevalence studies from multiple UK centres indicate that the highest rates of exposure to SARS-CoV-2 are occurring in cleaners and those working in acute medical settings and that is after adjustment for the deprivation index. In ICU or where higher protection is provided you can see the rates are much lower. Of course these rates of seroprevalence are of great concern as studies suggest that 1 in 10 people with COVID will develop long COVID.

Many nations and some UK Trusts are already using genomics as standard to understand transmission patterns and we know that healthcare workers' infections are occurring from COVID positive patients to healthcare workers who are wearing surgical masks and that infection and death from occupational exposure to COVID-19 is avoidable. By implementing better ventilation and PPE other nations such as China, Singapore, Taiwan, some centres in Italy and others have published a zero% worker infection rate from COVID. We can do this too and we want to work with you to achieve this. -16-

In Addenbrooke Hospital just by adding FFP3 respirators, their staff sick days from COVID were reduced by 37% and this is after adjustment for natural and vaccine-acquired immunity. The UK government must be congratulated on our vaccination programme which has been world-class. However no vaccine is 100% effective and we know that strains are fast evolving and new strains have shown increased infectivity. The UK has the exciting opportunity to be a world leader in innovative PPE by providing our workforce with reusable respiratory protection and goggles.

They have higher protection than disposable options and are much better for the environment. We know the government has spent over 18 million pounds on PPE. From my experience on the frontline the majority of this is single-use and will now have been incinerated. We know that disposable FFP3 masks cost around three to five pounds and they last for a maximum of around eight hours whereas reusable P3 respirators cost around 15 pounds and last for several years. -17-

Studies confirm reusable PPE provide a cost saving of 97% per worker per year compared with disposable PPE and therefore they offer a cost-effective and sustainable way of protecting our workers. We have the manufacturing capabilities in the UK which would result in reliable supply chains. Reusable masks are designed to fit a wider range of people with over 95% fit test pass rates and many UK trusts have already taken the fantastic initiative to roll out reusable P3 respirator programmes.

Wigan for instance provided every member of their 5,000 strong workforce with a respirator in the first wave. Nottingham also supplied 3,000 of their workers with a reusable respirator. These programmes have been successful.

A national programme would resolve the postcode lottery and PPE equity that currently exists. A national programme of high quality reusable PPE would allow workers the autonomy to protect themselves when they're in a situation where they are treating a COVID positive suspected or confirmed patient in close proximity in a location with poor ventilation. It would also empower local Trusts and Health Boards to increase their protection levels in event of a local spike in cases with swift efficiency during this pandemic and in the future. -18-

We have some fantastic British companies that have spent this year developing solutions to some of the perceived challenges in using reusable PPE and their innovative designs make communication easier using transparent polycarbonate for instance and fit testing fast and accurate using an app. They have 3D printing capabilities to ensure everyone can get a mask that fits. There are many different UK manufacturers to choose from.

These are just four that have already been working with our PPE charity to gain frontline worker feedback to optimise reusable P3 respirators for care settings. All of these companies want to invest further in the UK. This would mean frontline workers are provided with the PPE they want, need and deserve and we want to collaborate with you to support you in achieving these aims.

Gastroenterology Consultant: Thanks very much. I'm a physician in Southampton. I'm here with my (Association) President hat on. The Association is an organisation that represents nutritional care in all care settings but my other role is as Deputy CMO in (the Trust). I've had the task of leading our COVID response over the last 12 plus months and I'll show you one slide briefly which the chap on the right is a professor of respiratory medicine. -19-

He works in the TB lab and had understood very early on that some of the protection they use in the TB lab could be scaled up with production units for personal respirators. So he and colleagues have developed the Perso hood which is a personal reusable respirator. It's gone through safety standards and inspections with BSI, HSE and CE marks and we have managed to scale this up for our organisation such that all frontline healthcare workers have access to a Perso hood and that includes porters for example who have a roving role around the organisation, cleaners and all our healthcare staff. And we believe this has achieved two things, two broad things.

Firstly it's won hearts and minds. It's brought a great sense of safety, confidence and reassurance to healthcare workers working in really very difficult environments. And then secondly, on the left is the information that is publicly available on the government website for staff absences during the Covid period. We are the red line and we see over the weeks since January this year, rapid fall in staff sickness rates.

Now we accept and acknowledge that there are several drivers for this, one being vaccination. Second, about our forensic approach actually to testing and to possible acquired infections. But thirdly, we strongly believe our approach to PPE and specifically our use of reusable respirators.

So we believe we've found a solution that's worked well for our staff and worked well for our patients.

RCN (IPC): Thank you. -20- So coming towards the end of the presentation now, we just wanted to summarise before we close that today's meeting is a really welcome opportunity to openly discuss our members' concerns regarding the ongoing risks to them wherever they work. Between us we represent the majority of healthcare professionals and the concerns raised are consistent with the view that the current IPC guidance does not meet their concerns and their fears on the ground, even a year now into this pandemic. At a time when cases and hospital admissions are once again sadly rising, we do need guidance that reflects dynamic epidemiological and care situations, given the projected longevity of this pandemic.

We are all very clear that we have a long, long way to go with this. The risks and concerns our members express are very real, despite the positivity of the vaccination programme. And people are genuinely and remain genuinely frightened of infection, including serious illness, or actually increasingly now the development of long COVID.

The prevention of infection is a key priority for our members working in practice wherever that is, in order to protect both their patients and their fellow workers.

However, our members are very aware of the limits that they as individuals are able to influence on other issues such as ventilation, exposure to others who have infection, for example. So we welcome this opportunity for clarity and transparency on the UK application of science and evidence to better understand how this is applied and interpreted against other international standards. We hope that improved collaboration will help us to reach agreement on this issue.

AGP-A / RCSLT: Next slide please. -21- Thank you very much. So just a brief overview of our conclusions and moving forwards together. So just bringing us back to the key answer, we do want to see changes to the PPE guidance with explicit recognition of the impact of airborne transmission of COVID-19 and the delivery of care in all settings.

We want to see within the guidance some consistency which is in line with that reality. We're also keen to look at alignment with other countries such as the US and there are a number of factors that we've added into this slide as to why we think that's so important. We have highlighted that there are solutions and that UK manufacturers have developed reusable FFP3 type respirators and they stand ready to scale up to meet needs.

And we're really keen to work with you to support a constructive way forward. Thank you very much for listening.

Thank you so very much. Of course, we mentioned a UK approach. The UK, of course, is the four nations and it should be noted that there will be nuances among those nations.

But we are running impressively close to our time ambition.

IPC Cell: Good afternoon. Good to meet you all, if only virtually on this occasion. Firstly, can I introduce myself? I'm a medical microbiologist by professional background.

And I have now got several years experience, hence the white hair, working as an infection prevention and control doctor and director of infection control, both in (country) and in (country). And then more recently, I've led the HCI and AMR programmes for Public Health (country). And I'm currently also assistant medical director for Public Health (Wales).

But since Easter this year, I took up the chairmanship of the UK COVID-19 IP and C cell. And it's in this role that I'm here with you today. So a bit of background regarding the IP and C cell.

It was first convened as part of the emergency response arrangement set up by NHS EI and had its first meeting back in January 2020. And from the beginning, there's been a multi-organisational, multi-professional and devolved administration membership of the group. I've been a member throughout, and it has actually been an excellent group to be part of with its collaborative approach across the four nations.

The cell membership is a specialist infection prevention and control resource. It comprises specialist IP and C leads from NHS EI, Public Health England, Public Health Wales, Public Health Agency of Northern Ireland, ARHAI Scotland and the Ambulance Service. And our role throughout has been to provide that specialist IP and C input into the development of the IP and C guidance, which has supported healthcare services across the UK as we've managed through the pandemic.

So again, to stress that it is with a four nation collaborative approach. So in the early part of the pandemic, the IP and C cell was operational and meeting daily. And we've constantly reviewed the literature and developments, including WHO, ECDC guidance and literature reviews undertaken by organisations and bodies such as our ARHAI Scotland, SAGE, NERVTAG and more recently, the independent AGP panel, which has been set up during the response.

So the IP and C cell both reviews the guidance of others and the literature, but also responds to queries and inputs, updating the guidance as necessary. So we've been meeting very, very regularly. The meetings have stepped down to 5 days a week from May 2020.

And then in more recent times, we've been holding the collaborative meeting on a weekly basis with the secretariat of the IP and C guidance inbox, if you like, being run through NHS EI, but with good communications then across the other organisations. And once the guidance is developed from the cell, it's then reviewed through various processes, signed off by the four nations CMO and CNO group and then viewed and subsequently published through the publication process that's led by Public Health England. So as I say, it's been a group collaboration. Certainly, I've been pleased to be part of it. And it does produce guidance that's issued on a UK wide basis with a consistent approach.

But of course, as has been mentioned earlier, healthcare is a devolved responsibility. So the implementation and use of the guidance then sits with the healthcare services as run by each of the four nations. As you know, and we've alluded to earlier in this meeting, the most recent update to the guidance was published a couple of days ago on the 1st of June. And the latest iteration includes amendments to strengthen the existing messaging that was within the guidance and to provide further advice where needed, specifically on the hierarchy of controls and how to, or the need for local risk assessments in relation to high and moderate risk pathways with definitions and supporting resources added in to support those risk assessments.

The guidance does clarify that where there's an unacceptable risk of transmission remaining, when those risk assessments are complete, it may be necessary to consider extended use of RPE and the risk assessment needs to include looking at ventilation, patient capacity, separation of patients, patient pathway and the prevalence of COVID or invariance in the local area. In my view, those risk assessments need to be multidisciplinary and undertaken on a local basis. It's not for individuals to be making those risk assessments.

But given again that arrangements differ between the countries of the UK, then that will probably need to be determined on that basis. And it must be remembered that extended use of RPE, if considered to be appropriate following the risk assessment, needs to be supported by the fit testing as required by HSE, the education and training, supporting appropriate use, donning and doffing, etc. We do have evidence that there are downsides to extended use of RPE as well as the benefits potentially seen.

So the latest update also has additions in terms of clarity of the use of valved respirators and highlighting the need to protect those previously shielding. A full list of the changes are on page eight of the guidance, and I'm sure that you've looked at that in detail. Following our extensive review of the clinical and scientific review of the evidence, there haven't been any changes to the recommendations for PPE based on the new variants.

But I would stress that we do continue to review the evidence constantly. And with regard to WHO and ECDC guidance, etc., whilst there have been small changes, the recommendations we believe in the IP and C guidance remain consistent with the WHO approach and the ECDC guidance. And I'm sure that people want to move forward to the questions, so I'll close there.

Thank you. Thank you so very much. Now, we're into the Q&A session, but we did receive six questions in advance and we have lined up four people to respond to those.

I'm going to look perhaps to colleagues for nods. One way for me to handle the next session is to ask one of my colleagues to post each of those questions one at a time into the chat. So everybody can be clear about what that question is and introduce the person who we have lined up to respond to that.

And we can take those six first and then use the remaining time. Does that feel OK? Yes. OK, well, let's do that.

Question 1 How can we ensure the provision of guidance that is standardised across all four nations, is consistent with the latest evidence on airborne transmission, aligns with existing guidance on other airborne conditions such as measles or TB, and reinforces the need for all healthcare employers to undertake effective local risk assessments that reflect needs for flexibility in infection control?

Director, NHSEI: (IPC Cell) did stress about the continuous nature of reviewing the evidence. If one goes to the SAGE paper, you can see that's set out in some detail how that process has looked. And the frequency with which that has happened. But in starting by mentioning the SAGE paper, that's on purpose because I think there's an important timeline here with respect to the evidence review.

The SAGE paper was agreed on the 8th of April. It was published on the 23rd of April. 27 pages of detail reviewing the different aspects that are relevant to today's discussion.

It was not an accident as to why the SAGE paper was initiated. The timeline moves on in that on the 30th of April, the WHO changed the wording on its website regarding the transmission routes for potential transmission routes, SARS-CoV-2. I'm not going to read the wording. I'm sure you're all aware of that. But that was, as I say, three weeks after the SAGE paper was agreed. Importantly, the WHO did not change and has not changed its guidance with respect to healthcare worker respiratory protection based on that change.

A week later, approximately on the 7th of May, the CDC changed the wording on its website regarding the same issue, but also did not change any of its recommendations with respect to respiratory protection for healthcare workers. So, actually, the SAGE paper directly led to the latest iteration of the Four Nations IPC guidelines published two days ago, was the direct, was the initiator of that, but it was also the first of the triumvirate of the UK process, the WHO process and the CDC process to recognize these changes.

So I've used that approach to illustrate that we are continuously reviewing the evidence from the different processes that are involved and that coalesce in the IPC cell. And I think I'll pause at that point.

And just as we move on to question two, can I just point out, I mean, it's great that everybody's on camera and I know views are strongly held and positions are taken, but can we make sure that we're focusing very closely on what people have to say coming to this conversation in an open and a fair way.

Question 2 What consideration has the IPC cell made of the provision of FFP3 or equivalent, reusable respirators, which are sustainable and can be manufactured in the UK, to ensure frontline health and care staff have airborne protection against COVID-19? How can we ensure provision of such PPE becomes “business as usual” for this and future pandemics?

IPC Cell: Thank you. So this question is about what consideration has the IPC cell made of the provision of FFP3 or equivalent reusable respirators, which is sustainable and can be manufactured in the UK.

And firstly, I suppose it's important to point out that it's the IPC cell's role to be looking at the guidance for when FFP3 masks should be used, when PPE should be used, how it's used, risk assessments and that element of infection prevention and control. The actual provision of the PPE doesn't sit in the remit of the IPC cell itself. So throughout the pandemic, the UK has run a PPE procurement process and teams across the UK. And from the outset of the pandemic, there's been a PPE Decision Making Council in place, chaired by DHSC and with input from the IPC UK cell and other DA membership and PHE as well in that membership. And it's that group. So that group then has been the group that's been looking at the provision of PPE and also any issues in terms of availability of PPE and also about product specifications going forward.

So while members of the IPC cell certainly have input into the decision making committee and there's four country representation as well and all that feedback, it isn't actually the place of the IPC cell per se to be looking at the sustainability, etc. We certainly do provide advice in terms of decontamination issues and are aware that on some of the reusable products, etc., that there are difficulties around decontamination of those products and manufacturers recommendations around those. But again, it does sit outside the IPC cell group on that.

Researcher, Surgeon, MedSupplyDrive: You'd mentioned there are downsides to increased levels of respiratory protection. You'd also mentioned challenges of decontamination. In terms of the decontamination challenges, we have been working closely with manufacturers this year, and they've been working with NSS and the NHS to develop decontamination protocols that could be widely applied throughout different Trusts, including using lots of different methods.

And they've tested various different methods, including UV light, autoclave, using different detergents. This was working closely with NSS Dr SH in Glasgow in order to develop processes that would make a national programme with equity for all feasible and easier. In addition, there are various other really innovative ideas, filter boxes that have UV light that can clean filters.

So in terms of any challenges with regards to decontamination, our team would be absolutely delighted to help you with those. I would like to know, you'd mentioned there's evidence to downsides of using increased respiratory protection. I'd be very interested to hear of your thoughts on that, please.

IPC Cell: Yeah, that's fine. The downside I was specifically talking about was that staff do find the use of FFP3 masks quite difficult at times in terms of the tight fit and the damage to skin. Sometimes the heat that they experience in relation to their use, prolonged use over long sessions cause difficulties. And certainly in relation to airborne precautions as a generality in the sessional use in high pressure circumstances, we are seeing some increases in other infections related to, not necessarily to the mask wear, but to the gown use, etc.

So it always needs to be in the context of making sure that these things are used correctly.

Researcher, Surgeon, MedSupplyDrive: I absolutely agree, just to answer that. We've done multiple surveys.

One of the most recent was of 500 different frontline workers. Of people who are using reusable respirators, they much prefer them to disposable PPE. There are also studies, for instance one in the American Journal of Surgery, where 2,000 workers were given reusable PPE instead of N95 masks that were standard in their country.

They had a 94% fit test pass rate. The other 6% were given a respirator hood such as what's used in Southampton. All 2,000 staff were offered to go back to disposable masks if they wanted to.

They said they didn't want to.

Gastroenterology Consultant: I recognise the comments and experience around the FFP3 masks as someone that's had to wear them myself, which was actually one of the big drivers for our development in Southampton. We're just about to publish our experience both from an infection control perspective but also from a staff experience perspective. Actually, our experience has been that we've had much more positive engagement in infection control measures more broadly because we've been able to offer our staff an experience where they can undertake an eight or 12-hour shift in something that actually is not oppressive like an FFP3 mask.

Thank you for those interventions. If we could have question three.

Question 3 Improvements in the design and ventilation systems of healthcare environments will take time and even then will not effectively reduce risk of aerosol transmission within 2m of a patient. In addition, many frontline workers work in community settings where close proximity and ventilation is unpredictable e.g. homes, general practice, care homes and prison settings. In some of these settings, people may live in close proximity and the risk to professionals is higher. This emphasises that PPE remains a crucial mitigation measure that needs to be optimised. Does the IPC cell have other options if they do not agree with this?

Director, NHSEI: So the new iteration of the guidelines has strengthened the point about hierarchy of controls. It's been referred to in the presentation earlier on today. Again, I hark back to SAGE paper where results of HSE inspections that took place not too long ago are summarised, showing the majority of Trusts, as inspected, had not implemented fully the IPC measures.

The hierarchy of control, of course, means that if one were to adopt measures at the bottom of the triangle of hierarchy of controls without doing the other measures, then you do not ablate risk and you might, in the eyes of individual health care workers, increase risk. So the hierarchy of controls is absolutely vital and that's one of the reasons why that's been re-emphasised in the latest iteration. In terms of factors that need to be considered around this particular issue around specific care areas that may be poorly ventilated and or overcrowded, again, I go back to hierarchy of controls.

Are there other measures that can be taken, improving the airflow, dilution by opening windows, enhancing mechanical ventilation? Clearly, that may not be possible, the latter one, in many situations. Administrative controls, as outlined in the IPC guidance, such as screening, triage, testing, etc. Ventilation, namely HTM03, is being reviewed as we speak and is actually in the publication process.

However, I'm aware, of course, that such guidance is primarily directed at new builds and so is not an immediate source of improvement to current existing buildings. We are attempting to harness the available data to provide practical advice on what can be done, could be done, to improve ventilation in existing buildings. That, hopefully, will be published before too long. I will pause there because I think that's the salient points covered for this question. Over.

Thank you very much for that. There are two hands, which we'll try to take quickly.

RCN (IPC): Thank you. We agree, of course, that ventilation is really a very important measure in relation to interrupting the risk of spread of COVID-19. Can I just check for clarity? How were the HSE engaged in the development of the IPC guidance and how is the IPC cell working with the Health and Safety Executive on this issue?

Director, NHSEI: So, without going into specific detail and naming names, I can absolutely assure you that there was very significant input into the SAGE paper from HSE. And that HSE, as I say, were major contributors to that and therefore as the new iteration of the IPC guideline is in direct response to the SAGE paper, that's the direct line through to HSE.

Microbiology Consultant / FreshAir NHS: I think the aim of that question was really to demonstrate that the short range risk, which is what most of the presentation was about, is not mitigated by ventilation. Now, as part of Fresh Air NHS, and as part of the letter we wrote four months ago to Boris Johnson, we highlighted ventilation, so predating SAGE. And we're all aware we work in hospitals. I work in a brand new hospital, which ventilation is half the ACH that it should be, and it's all single rooms. And we have had no civilian healthcare worker transmission.

So ventilation is important. But what we are stating is across the NHS for all workers, there is an unmitigated risk. There is that residual risk.

It's not an if, and where does it exist? And we go hunting for it. It's there. And that is why the PPE is so important to get right.

Not because we want it to be the last, the only mitigation measure. It's because it is the only mitigation measure when you're having that close contact for long duration and in with an infectious patient. And I think that is the key that I'm not hearing coming back out of this conversation, is I'm not hearing an engagement with that.

And I appreciate that there has been a shift. The SAGE paper I read in detail was a definite shift towards recognising the aerosol transmission. But currently, we still have a gap.

We don't have a firm foundation on the routes of transmission on which to build the risk. And I'm really glad to hear from **IPC Cell** that it's moving away from individual risk, because some people have interpreted that as that. So we've had people saying, and it's in the IPC strategy, if staff are anxious, they can ask for it.

This is not about anxiety. This is about healthcare protection. And so I would just like to explore that a bit more short range.

Is there an acceptance? Do the IPC cell accept that there is a short range within a metre to a metre and a half risk of highly concentrated aerosol that will not be dealt with by ventilation, no matter how good it is?

Thank you for that. And **AGP-A Lead**?

AGP-A Lead: Sorry, I'd like to hear the answer to my colleague's question before I comment.

Chair: So I think what I'd prefer to do is to press on through the remaining questions and then loop back to those hanging issues with the remaining time, if that's okay.

AGP-A Lead: Okay, I can just comment on the involvement of HSE.

We've had extensive communications with HSE by our health and safety expert that we use. And HSE actually deny having very much involvement at all. And it's very difficult for us to find any evidence that there has been interaction between HSE and IPC. Of course, IPC don't publish their minutes. So I'm not sure that I accept the statement that's just been made about HSE's involvement. We've actually told us that when they're not interested in deaths of healthcare workers in hospitals, as long as they've been wearing surgical masks in compliance with PHE guidance, which seems quite perverse to me.

Right, well, let's park that there for the time being.

Question 4 How are the IPC cell ensuring that national guidance is coordinated with the HSE to ensure Infection Control and workplace Health and Safety regulation is consistent?

So HSE colleagues are regularly consulted on the issues raised. So on specific issues, we will refer specific questions to HSE in relation to specific valve uses or valve mask use, etcetera. We check those things through with them.

And the guidance is considered by HSE. So there's a recent HSE report, February 2021, that didn't note any issues with the IP and C guidance and highlighted organisational approaches to local risk assessments and emphasised the need for triangulation in approach between health and safety and occupational health and IP and C within the organisations. Also, HSE are members of the PPE Decision-Making Committee. And again, the IPC cell are members of that committee. So they take, or we take, via that membership, queries to the HSE with regard to specific products, etcetera. So there is that loop around with HSE and things are checked with HSE.

AGP-A Lead: Well, I don't accept that. HSE are quite categorical in their statement that surgical masks are not suitable for protection of the wearer against aerosol. And as aerosol infection is now accepted as a potentially very important mode of transmission, how on earth can we square that clear statement with apparently you saying that they actually agree with what you're saying in your guidance and I don't understand that?

I think colleagues have been quite clear that there are very direct lines between HSE and IPC and other groups. So I'm certainly inclined to take it on trust that that is true.

AGP-A Lead: Well, you may be, but I'm not sure that we are. Thank you.

I think there's quite a lot, perhaps, to come out in the answers to questions five and six.

Question 5 How can we secure greater future collaboration between policy makers and stakeholders in the development of policy and guidance?

NHS-EI: So for those of you that I haven't met. I work really closely with the IPC team. I am the national director of the team.

So the question was, how can we secure greater and future collaboration between policy makers and stakeholders in the development of policy and guidance?

I think I'd like to start by saying, look, it's really important to note that any lack of greater or good collaboration in the last 16 months on the UK IPC guidance does not constitute nor reflect a lack of desire on the part of the UK IPC cell to collaborate. I think it's also important, and I want to put this out first, that we must recognize that the devolved nations will all have undertaken a level of collaboration that will not necessarily be reflected in the way it's done in England. So that I think is really important.

But collaboration has taken place with the Royal Colleges for the UK IPC guidance. And it's noted that this has been unprecedented and uncharted times, and it's been a very fast-moving pace of the pandemic. And the continuous learning of the virus has meant that guidance changes had to occur at pace, which I don't think any of us can really deny.

And that's been done in order to protect our patients and our workforce. I absolutely recognize that sometimes there's been limited collaboration between stakeholders and guidance developers. And this, I think, is important for you to know that this isn't our, and would never be, the preferred option for the development of UK IPC guidance.

But unfortunately, in this last year or so, it has been unavoidable. I think the upside of all of this is that discussions are taking place between the Department of Health, Public Health England, NHS England and Improvement, and our UK IPC cell members to approach the development of national IPC guidance differently going forward. And again, we will do this with stakeholder engagement once we have set out or thought through the principles, at least, around the engagement.

I do want to draw on and just remind members who are on this call with us that when we did work together, I think it was at the end of wave one before the start of wave two. We had a few weeks where we did some work with numerous stakeholders on the Every Action Counts campaign. And that, I think, was a really good example of where we had time and space to do the thinking.

We were less hazy. Prevalence was lower. We were able to really get the level of input we were seeking.

And we produced, co-produced, co-designed over a number of weeks a really fantastic piece of work, which was very successful in the implementation and uptake across organisations. And I think that is what we absolutely want to aspire to for the future. And I absolutely recognise it hasn't been where it needs to be.

But the context here is also really important to note. What I would be interested to hear, though, is as we progress our work on the stakeholder engagement, is the views of you as stakeholders and what we can absolutely do better. Because we do want to hear that. And I think we recognise how important it is to have you work with us on development of guidance in the future.

AGP-A / RCSLT: Actually, we really welcome the opportunity to work with you going forward. I think it's a bit worrying, though, to hear that you haven't had time. I think, you know, at the beginning of the pandemic, we also had daily standard meetings with our members, because as I said to our members, I've never lived through a pandemic before, have you? Why don't we work together to find solutions? And these were members at the time who were really worried about exposure to the virus because they were doing assessments, which meant that they were inducing coughs and were getting coughed on by the patients and they didn't feel safe.

So we were absolutely first off the block last April or last March, actually, to see what we needed to do to work with them, because they are the frontline practitioners who are living day to day that experience of meeting the needs of patients in a situation which is unknown. And I think what we're concerned about is we haven't been given the opportunity to help to triangulate what I would say is pure scientific knowledge with practical, pragmatic solutions that keep our frontline workers safe.

And it's by working with them that we produce a lot of guidance. But also, you know, we've had plenty of opportunity where we've had dips in the pandemic where we can work with you. And I might just say that we also worked really hard with NHS EI at pace on key areas of work like setting up nightingales.

We were given a day to help to look at workforce. So we did do work at pace with government when we were asked to. And I think we would absolutely all commit to do that whenever we need to, because this is unprecedented, as we've all said.

So I just want to make a plea that we do want to work with you. But can we think of a way that that's done in a listening, because I know you're quite rightly said, we need to listen to each other. But I'm very worried that I don't feel that some of the points that we made in the presentation have been taken on board yet. So I want to see how we can shift the conversation. Thank you.

Thank you very much for that. I must say, I'm slightly surprised that more hands didn't go up at that point. But let us move swiftly to the sixth question.

DHSC PPE Cell: I'm working in the innovation and sustainability team within the PPE cell. So just wanted to pick up on some points that MedSupplyDrive raised about some of the decontamination work that needs to happen around the reusable respirators.

So we've been working closely with Dr. SH in Scotland, and she's put together a decontamination expert group that have been putting together some guidance for how the reusable respirators could be washed and decontaminated at a larger scale using already validated automated methods, such as the equipment that's commonly available already within Trusts. So that guidance is close to being finished. We've done that in collaboration with the infection prevention and control team, and that will go through the DMC group that was already mentioned.

So hopefully once that's published, manufacturers can use that guidance to validate their products again, so that the decontamination methods that feature in the manufacturer's instructions can be those that are already widely used in hospitals. Once that's published and manufacturers have validated their decontamination processes with that, we are anticipating running some small pilots to work out exactly the best logistics for taking the respirators from a healthcare worker to the decontamination unit department and return those back to the healthcare workers, looking at how they're labelled, what's the best way of tracking. Lots of those things are already in place within the decontamination departments and trusts, but just to run pilots to see what works best for that, with the aim of publishing some guidelines on how, if a trust wanted to roll out reusable respirators wider, how they could potentially look to do that using an automated and already validated decontamination method.

I appreciate that's not relevant for all settings and more for bigger organisations, but the plan is that there will be part two and potentially part three to this guidance, which can set out ways in which different organisations with different capabilities and different resources could look to decontaminate these reusable respirators in a safe and consistent way, so they can be used more widely. So it's a work in progress on that. We've spoken to several of the manufacturers that MedSupplyDrive mentioned, are aware of some of the work they're doing, and they're getting to the point where some of them have got some quite novel products and they're getting those through the regulatory testing, and we're kind of keeping an eye on that for the future, that hopefully those masks that fit better and are more comfortable can be what becomes more widely used in the future.

Thank you for that, and let me just say thank you to you all for responding to those questions.

MedSupplyDrive: Thank you, thanks very much. Yeah, that sounds like promising progress, and if there's anything further that I can do to help, as a team we're incredibly keen to help support you in achieving these aims, that's fantastic. I had already put (PC) in touch with the teams in Wigan, Nottingham, Leeds, Guy's and Tommy's, and in Cardiff, who have already implemented reusable respirator programmes. They'll be able to help you advise how the logistics work in practice, and also I think we might have mentioned in our previous meeting, the manufacturers are developing QR codes which help trace the masks through decontamination protocols.

There's another Innovate funded platform called Reach that has also designed a system which makes tracking through decontamination safe and traceable. I've sent all these details to (PC) so if that's useful for you, and I'd be delighted to help in any way that I can.

I suppose what we were hoping in this forum moving forward, is four nations standardisation, so that instead of trusts having, some trusts, we know that 17 trusts have now implemented FFP3 level of protection in their red zones, but in many others they're not permitted that, they're following the guidance very rigidly and only allowing their staff FFP3 masks if they're performing an AGP.

I have been in that situation myself on the front line. I suppose what we were hoping through this forum is that FFP3 would be available for all workers who need it, in that they'd be in close contact with COVID suspected or positive patients, and we were suggesting that FFP3 reusable respirators would be a feasible and cost-effective, sustainable way of achieving that.

Thanks for that, and I've also seen in the chat other offers of engagement, which is great.

RCN (Director): I just wanted to take us back to a critical point in terms of deploying those guidelines in organisations. So we're saying that we're, one of the statements said it wasn't for individuals to make risk assessments, and **IPC Cell** made that point, and I actually endorse the fact that organisations must do as much as they can to make risk assessments for all of their potential working situations that their employees are faced with.

So let's just go back to the point. We're now making, and I want to make the point then is that employees, are we saying that employees will make the decision to use an FFP3 in any situation they're faced with, i.e. will employers be asked to issue that equipment to everyone, say for example the back of a car of a community nurse, and to have that equipment on an ambulance?

So I just, it's very explicit for settings of care in the guidance, but this bit I think is where it all becomes a little bit unclear, and we're relying on people to decide in the moment.

So I think that's my kind of premise, and then it would be really helpful if we've had this conversation before these guidelines were issued, so we could have really nailed that bit. Thank you.

Thank you for that.

RCN (IPC): Thank you very much. I wondered if I could just ask a question that I struggled to respond to members on when I get asked on a frequent basis.

So one of the issues that I get asked a lot by members is around the government videos that you would all have seen around how Covid basically looks like smoke in the air, therefore the need to open windows, increase ventilation, etc. Can I check whether the IPC Team consider that those videos constitute airborne transmission of Covid-19?

Because our members watch those videos, they see and they listen as members of the public, and they understand they're very well designed, the videos, to get the messages across. And one of the main concerns they have is that whilst this is acknowledged as a risk in the home, that is not reflected in the health and care setting, if we're talking about the health and care estate.

So is it possible to have clarification on whether the IPC Team agree that those videos replicate airborne transmission and therefore that occurs in the hospital settings as well? Because that would help us to understand where you are coming from.

BMA: I think we appreciate that the recent update was a step in the right direction, but it's not new insofar as our occupational medicine doctors frequently tell us the law already obliges employers to undertake a detailed, suitable and sufficient assessment of risk. So it'll be useful to hear a bit more about what you're doing to support that happening at a local level?

Thank you for that.

Director, NHSEI: So I'll respond to at least one of them. The cartoons with the smoke, that's a visual depiction to try and get across the issue of virus being transmitted through the air, as opposed to specifically small particle versus large particle. That's my take on it.

I'm not responsible for those cartoons. I have no input into those. The bit I think you're wrong about is that you say that that's okay for the home, but it's not okay for the healthcare setting.

But of course, there's a whole series of measures in place in healthcare that are not in place in the home. Patients are not wearing masks in the home, and healthcare workers are not wearing masks in the home, and they're not doing the testing. There's not the ventilation necessarily in place, etcetera, etcetera, just to give three examples.

So that's my take on, and I can't comment. I'm not formally a part of the IPC cell, but that's my take on those cartoons. Over.

Microbiology Consultant / FreshAir NHS: I think I have to disagree with you Professor around that. I think the smoke analogy is the perfect analogy for the small particle transmission, and that is really what this is all hinging on.

So the minute we're talking ventilation, which we clearly are, because that's in your own guidance, we are talking about airborne transmission, the small particles that don't just drop within two metres ballistically. So we are trying to mitigate that route, and that is exactly as my presentation was all about. We need both ventilation and we have very few hospital settings will be ideal from a ventilation point of view, and we acknowledge it cannot be done overnight. We need to think innovatively about local exhaust systems, HEPA filtration. I'm involved in a study in Addenbrooke looking at HEPA filtration.

I know there's work going on with Professor Cath Noakes in schools. So we do recognise that. But, and I keep coming back to this, PPE is your only remaining measure, and that is what we would like a real commitment to from this meeting, and if we don't get it from this meeting, then another opportunity to explore the detail, because we really haven't engaged on the detail of the science, which is rock solid as far as I'm concerned, and I too have had 20 years experience in infection control, and my specific area of interest is ventilation and aerosols. So we do need more than just, you know, there's a group of experts who are happy that there's no change in the evidence, because from many people's point of view, and I accept there's difference of opinion that are valid and need to be explored, but from many people's point of view, the analysis of the evidence right from the start was inadequate, or at least didn't take a precautionary approach, and now we know a lot more than we did at the beginning.

That too is acceptable, and we are committed to moving forward. We're committed to getting right into the nitty-gritty and explaining why we believe these risks are continuing, and let's not forget that it is in keeping with the big numbers we've seen. You know, over a thousand, well, the latest figure I saw was a thousand, but we don't actually know, do we, because the data is not transparently and openly shared.

So how many healthcare workers actually have long Covid? The figure I've seen is 1,000 to 122,000. I don't know if that's accurate or not, because there are no official figures I can go to, and I can't compare them across trusts at the moment. So we need for trust to be regained, for us to be in a fit state to face any wave that comes, or the next airborne pandemic, we need to sort this out, and that's why we're here, really, to help, to engage, to use our, in this group there's a huge amount of expertise that has not been tapped into, and we're just laying it on the table saying we're willing, and we would like to be engaged with you.

Chair: Thank you very much for that. I'm not going to try and be comprehensive. So there's definitely something about engagement, and about engagement at pace. There's issues around hierarchies of control, ventilation, that maybe we can do something slightly better to underline the HSE engagement, and that's not a promise, but we can certainly think about that.

There are other questions that have been posted in the chat. There's obviously engagement going on already on reusable kit, et cetera, and long may that continue. There are questions about the videos and the parities on the guidance, et cetera.

So those are all things that I managed to pick up whilst kind of engaging with the discussion. Others will have captured more, I am sure, but just to let you know that those things have been heard. I wonder whether one of the ways in which we can continue on is for us to actually respond slightly more formally on those six points as well.

NHS: Thank you to everybody that's taking part in this evening's discussion. I'm pleased it's been a discussion. It's been a debate.

We haven't had any heated debates, although I've seen quite a few nods and shake heads and the rest of it. So there is some still difference of views, and that's fine. It's good to have professional debate, and it's good to have that professional challenge.

So my commitment, and I can only speak, I know my colleague is on as the interim CNO of (country) and I know that my medical director colleagues and CMOs etc would say the same, which is let's keep the conversation going.

I hear that you are generally, what was it, BMA's final point was step in the right direction in this latest guidance and I see colleagues nodding to that, but it's not there yet in your view and AGP-A Lead, I know you were shaking your head a lot to that, but AGP-A Lead and colleagues, I hear what you're saying. I will work with you and for you and together I'm sure we will have further conversations. I'm not going to sit here now at six o'clock in an evening and say what those are.

I think that would be inappropriate and I don't think it would justify the debate that we've had, but clearly there is still professional debate and you know, colleagues from the RCN will know my philosophy anyway as TUC knows that we can professionally debate, it's the right thing to do and that's like what I'm hearing today. But as NHS EI, as one small part of this overall collective, we stand ready to work with you and to professionally debate and continue to work together to make more steps in the right direction.

Thank you so very much for that.

I think that's probably the very right note on which to draw this great discussion to a close. As I said, I think what we want to do next is to respond on those six points in a slightly more detailed way and the conversation is clearly open and long may it continue.

And with that, thank you all so very much indeed. Have a great evening.